

AMENDMENTS TO THE CLAIMS

Claims 1-15 (Canceled)

Claim 16 (Currently Amended) An ultrasonic welding structure for bonding a columnar heating target formed with a resin to a predetermined bonding target by pressing a resonator against the heating target and applying a high frequency vibration from the resonator to the heating target, wherein

a concave portion is provided on a bottom surface of the resonator,

the bonding target includes an insertion hole for inserting the heating target, and

the insertion hole includes a notch formed in an inner edge of the insertion hole on a side facing the resonator.

Claim 17 (Previously Presented) The ultrasonic welding structure according to claim 16, wherein

the notch serves as an acceptance unit that accepts the heating target in a molten state.

Claim 18 (Previously Presented) The ultrasonic welding structure according to claim 16, wherein

the notch serves as a stress relaxing unit that relaxes a stress generated within the heating target due to a contact with the inner edge of the insertion hole.

Claim 19 (Currently Amended) An ultrasonic welding structure for bonding a columnar heating target formed with a resin to a predetermined bonding target by pressing a resonator against the heating target and applying a high frequency vibration from the resonator to the heating target, wherein

a concave portion is provided on a bottom surface of the resonator,

a surface in the concave portion of the resonator on which the resonator contacts with the heating target is formed in a substantially flat shape, and

the heating target includes a resonator connecting unit that is formed to protrude toward the resonator.

Claim 20 (Currently Amended) An ultrasonic welding structure for bonding a columnar heating target formed with a resin to a predetermined bonding target by pressing a resonator against the heating target and applying a high frequency vibration from the resonator to the heating target, wherein

a concave portion is provided on a bottom surface of the resonator,

the resonator includes a protruding portion that protrudes from a bottom surface of the concave portion of the resonator toward the heating target, and the protruding portion extends beyond the bottom surface of the resonator which is outside the concave portion and is formed in a substantially semispherical or conical shape.

Claim 21 (Previously Presented) An ultrasonic welding structure for bonding a columnar heating target formed with a resin to a predetermined bonding target by pressing a resonator against the heating target and applying a high frequency vibration from the resonator to the heating target, wherein

the resonator includes a protruding portion that protrudes from a bottom of the resonator toward the heating target, and

an inclined surface is formed on the resonator from the bottom of the resonator to a base of the protruding portion.

Claim 22 (Canceled)

Claim 23 (Currently Amended) The ultrasonic welding structure according to claim 22 20, wherein

the protruding portion is formed in a substantially semispherical shape, and
the resonator acceptance unit is formed in a substantially conical shape with a diameter large enough to include the protruding portion formed in the substantially semispherical shape.

Claim 24 (Currently Amended) The ultrasonic welding structure according to claim 22 20, wherein

the resonator acceptance unit is an elongated hole formed along a direction of pressing the resonator.

Claim 25 (Currently Amended) The ultrasonic welding structure according to claim 22 20, wherein

the resonator acceptance unit is a penetrating hole formed along a direction of pressing the resonator to reach a bottom of the heating target.

Claim 26 (Currently Amended) An ultrasonic welding structure according to claim 22 20, wherein

a notch is provided in an upper edge of the resonator acceptance unit.

Claim 27 (Currently Amended) An ultrasonic welding structure for bonding a columnar heating target formed with a resin to a predetermined bonding target by pressing a resonator against the heating target and applying a high frequency vibration from the resonator to the heating target, wherein

a concave portion is provided on a bottom surface of the resonator, and

the heating target includes

a large-diameter portion located on a side of a base of the heating target;
and

a small-diameter portion located on a side of the resonator relative to the large-diameter portion, with a smaller diameter than a diameter of the large-diameter portion.

Claim 28 (Previously Presented) The ultrasonic welding structure according to claim 27, wherein

the bonding target includes an insertion hole for inserting the heating target, and a boundary between the large-diameter portion and the small-diameter portion of the heating target is arranged downward of an upper surface of the bonding target in a state in which the heating target is inserted into the insertion hole.

Claim 29 (Previously Presented) An ultrasonic welding structure for bonding a columnar heating target formed with a resin to a predetermined bonding target by pressing a resonator against the heating target and applying a high frequency vibration from the resonator to the heating target, wherein

the resonator includes

a protruding portion that protrudes from a bottom of the resonator toward the heating target, the protruding portion being formed in a substantially semispherical or conical shape; and

an inclined surface formed from the bottom of the resonator to a base of the protruding portion, and

the heating target includes a resonator acceptance unit in a shape of a penetrating hole formed along a direction of pressing the resonator to reach a bottom of the heating target.

Claim 30 (Canceled)